SECTION 2.6 RETROFIT INVENTORY

A stormwater retrofit inventory and prioritization assessment was conducted as part of the Bush River Watershed Study in February 2003. Stormwater retrofits are being pursued as one of the tools of the Bush River Watershed Management Plan to provide channel protection storage to limit downstream channel erosion and to provide water quality treatment to reduce pollutant loading to receiving streams and the Chesapeake Bay during stormwater runoff events.

Center staff conducted the inventory in portions of four subwatersheds of the Bush River watershed, including Haha Branch (OP-10), Otter Point Creek Direct Drainage (OP-1), Lower Winters Run (OP-2) (primarily targeting the Route 24 corridor), and Plumtree Run (OP-9). These areas were focused on for the following reasons:

- A preliminary retrofit inventory already exists in the Bynum Run subwatershed (KCI, 1999).
- Tidal water areas such as lower Haha Branch and Otter Point Creek Direct Drainage exhibit relatively high quality conditions and protecting the current conditions is a priority identified in the management plan. These areas are also planned for significant increases in future development.
- Lower Winters Run tributaries off of the Route 24 corridor are impacted by the rapid development that has occurred over the last 10 to 15 years. Stormwater management associated with the new development does not typically provide channel protection storage. Retrofitting existing facilities should reduce the rate at which the downstream channels are enlarging and reduce the amount of sediment and associated nutrients transported downstream.
- Plumtree Run presented an opportunity to fully investigate a smaller subwatershed planning unit, where much development exists with no stormwater management. The watershed ranking factors (described in Section 2.7) identified Plumtree Run as the highest ranking subwatershed outside of Bynum Run in terms of potential for restoration. The biological and physical habitat data in the watershed are poor, and approaches to improve these conditions were explored.

The retrofit candidate sites are depicted in Map 12. Key aspects of the assessment are presented in this section. Appendices D and E contain a general discussion on the retrofitting process and the retrofit inventory sheets, which contain descriptions of each retrofit and a conceptual sketch of the most likely retrofit option.

It is important to note that project scope limited the extent of the retrofit inventory and therefore does not reflect the extent of opportunities for retrofitting that may be available throughout the Bush River watershed. The County should look for opportunities to conduct further retrofit inventory efforts to achieve wider watershed coverage. A more complete picture of watershed retrofit opportunities will likely result in more cost effective application of resources and yield higher pollutant reduction and channel protection benefits throughout the watershed.

Bush River Watershed Retrofit Inventory and Assumptions

A preliminary office investigation (using aerial photography, topographic and other base mapping, and preliminary stream assessment and SCAM results) identified approximately 22 candidate stormwater retrofit sites. Screening criteria were employed to target sufficiently large drainage areas associated with outfall locations and existing ponds so that the number of candidate sites to investigate would be reasonable and the total watershed area potentially addressed was maximized. Other screening criteria targeted sites upstream of locations where

the downstream physical assessment indicated unstable banks and significant channel erosion. The ideal target for each site was to provide 100% of the water quality volume (1 inch per impervious acre) and 100% of the channel protection storage (extended detention for the 1-year, 24-hour event, which is approximately 2.6 inches).

In addition to the original 22 candidate stormwater retrofit sites identified in the office, at least seven additional candidate sites were identified during the field investigation portion of the analysis, yielding a total of 29 candidate sites. Of the 29 sites, 18 are located at or near storm drain outfalls and 11 are at existing stormwater management facilities, generally stormwater detention facilities (i.e., dry ponds). In general, candidate stormwater sites have drainage areas of at least ten acres. Exceptions to this occur when isolated hotspot areas are targeted or where retrofit concepts involve practices that perform best when serving smaller drainage areas (e.g., bioretention, infiltration trenches).

Of the 29 original candidate sites, six were deemed infeasible or impractical based on the field reconnaissance and/or further office analysis. These six candidate sites were dropped from further consideration. The reasons for dropping a site from further consideration generally were because of too little available area, poor or impractical construction and/or maintenance access, or the presence of existing natural features such as mature forest and wetlands. Table 11 provides a summary of the final 23 retrofit sites that are considered feasible after the field verification and subsequent office confirmation. Map 12 shows the locations of the 23 final candidate retrofit sites.

Most of the retrofit concepts involve use of stormwater treatment practices that are identified in the Maryland Stormwater Design Manual (2000) as capable of removing 80% of the total suspended sediment (TSS) load, and 40% of the total phosphorus (TP) load in the treated runoff. Retrofits where practices, such as dry ponds, previously exist will have a net load reduction something less than these percentages (roughly half is reasonable to expect) since limited treatment is already being provided by the existing practice.

Table 11. Summary of Final Candidate Retrofit Sites

Site ID	Subwatershed	Retrofit Concept	Area (ac)	Est. Impervious Cover	New or Existing Facility	Land Ownership	Notes
HH-1	Haha Branch	shallow marsh ED	40	85	existing	private	industrial park/green roof opportunity
HH-2	Haha Branch	plunge pool	15	75	new	private	apartment complex
HH-2A	Haha Branch	plunge pool	10	75	new	private	senior housing townhouses
HH-4	Haha Branch	shallow marsh ED	27	30	new	public	mixed residential
HH-5	Haha Branch	Shallow marsh ED	10	25	existing	private	SF residential
HH-5A	Haha Branch	infiltration trench/ level spreader	0.5	100	new	public	road runoff
OP-1	Otter Point DD	shallow marsh ED	15	30	existing	private	SF residential
OP-1A	Otter Point DD	shallow marsh ED	15	30	new	unknown	open space area
OP-2	Otter Point DD	shallow marsh ED	15	40	new	public	apartment complex
OP-2A	Otter Point DD	cut-off wall/ trench	NA	NA	new	public	head cut mitigation
OP-3	Otter Point DD	bioretention	22	40	new	public	APG abandoned housing
OP-4	Otter Point DD	shallow marsh ED	7.5	90	existing	private	Food Lion shopping center
OP-6	Lower Winters DD	shallow marsh ED	50	70	existing	private	BJ's assuming buildout
OP-7	Lower Winters DD	micropool ED	120	50	existing	public	Walmart
OP-8	Lower Winters DD	shallow marsh ED/ bioretention	17	35	existing	private	mixed residential
OP-9	Lower Winters DD	micropool ED	120	30	existing	public	SHA site/ Weiss market plaza
OP-9A	Lower Winters DD	bioretention	3	100	new	private	Weiss market parking lot
OP-10	Lower Winters DD	micropool ED	19	25	new	public	SF residential
OP-11	Lower Winters DD	micropool ED	35	40	existing	public	Abingdon ES
OP-12	Lower Winters DD	shallow marsh ED	19	50	existing	private	mixed residential
OP-13	Middle Winters DD	shallow marsh ED	29	90	existing	private	Festival at Bel Air shopping center
OP-13A	Middle Winters DD	bioretention	2	100	new	private	Festival at Bel Air shopping center
OP-14	Plumtree Run	shallow marsh WL	25	25	new	unknown	SF residential

Priority of Sites Based on Assessment

Weighing the individual merits of the candidate retrofits in terms of water quality, channel protection, cost, implementation issues, and other benefits/liabilities can provide an indication of the most effective (i.e., biggest bang for the buck) practices; however, it does not always provide a rationale for selecting retrofits to pursue in terms of overall subwatershed or catchment benefit. There may be a greater benefit in terms of overall subwatershed or catchment quality if several less effective retrofits, located within the same subwatershed are pursued together. Looking at the retrofits according to subwatershed and catchment location also allows information from other watershed-wide assessments to be integrated into the retrofitting analysis.

Initiating a stormwater retrofit program requires a certain level of expertise and experience on the part of the local agencies involved. It may be best to pursue one or more of the initial projects as demonstration projects. Good opportunities often exist on publicly owned land (e.g., OP-9) where there are few potential infrastructure conflicts and the retrofit designs are not highly complicated or where there are good opportunities for interagency partnerships (e.g., State Highway Administration). Additionally, many of the existing dry pond modification sites offer similar low risk efforts. By selecting a few projects that can be implemented relatively easily, both the public and agency personnel can become familiar with retrofit project requirements and be better able to implement more complicated projects down the road.

Taking the above into consideration, the candidate retrofits were broken into three prioritization tiers (Table 12) with the first tier representing the top retrofit recommendations. Tier 2 and 3 retrofits still may have merit in pursuing, particularly if funding is available, a willing partner is identified, or it is deemed to be a good demonstration project due to its visibility. However, Tier 2 and 3 retrofits are not viewed as having as large a benefit either because they provide limited treatment, are associated with significant forest or wetland impacts, or may have lower public acceptance. Table 13 provides more specific description and justification for the Tier 1 retrofits.

Table 12. Prioritized Candidate Retrofit Sites

Tier Rank	Site ID	Subwatershed	Retrofit Concept	Area (ac)	Est. Impervious Cover	New or Existing Facility	Land Ownership	Notes
1	HH-1	Haha Branch	shallow marsh ED	40	85	existing	private	industrial park/green roof opportunity
1	HH-4	Haha Branch	shallow marsh ED	27	30	new	public	mixed residential
1	OP-4	Otter Point DD	shallow marsh ED	7.5	90	existing	private	Food Lion shopping center
1	OP-6	Lower Winters DD	shallow marsh ED	50	70	existing	private	BJ's assuming buildout
1	OP-9	Lower Winters DD	micropool ED	120	30	existing	public	SHA site/ Weiss market plaza
1	OP-14	Plumtree Run	shallow marsh WL	25	25	new	unknown	SF residential
2	HH-2	Haha Branch	plunge pool	15	75	new	private	apartment complex
2	HH-2A	Haha Branch	plunge pool	10	75	new	private	senior housing townhouses
2	HH-5	Haha Branch	Shallow marsh ED	10	25	existing	private	SF residential
2	HH-5A	Haha Branch	infiltration trench/ level spreader	0.5	100	new	public	road runoff
2	OP-1	Otter Point DD	shallow marsh ED	15	30	existing	private	SF residential
2	OP-2	Otter Point DD	shallow marsh ED	15	40	new	public	apartment complex
2	OP-2A	Otter Point DD	cut-off wall/ trench	NA	NA	new	public	head cut mitigation
2	OP-7	Lower Winters DD	micropool ED	120	50	existing	public	Walmart
2	OP-11	Lower Winters DD	micropool ED	35	40	existing	public	Abingdon ES
2	OP-13	Middle Winters DD	shallow marsh ED	29	90	existing	private	Festival at Bel Air shopping center
3	OP-1A	Otter Point DD	shallow marsh ED	15	30	new	unknown	open space area
3	OP-3	Otter Point DD	bioretention	22	40	new	public	APG abandoned housing
3	OP-8	Lower Winters DD	shallow marsh ED/ bioretention	17	35	existing	private	mixed residential
3	OP-9A	Lower Winters DD	bioretention	3	100	new	private	Weiss market parking lot
3	OP-10	Lower Winters DD	micropool ED	19	25	new	public	SF residential
3	OP-12	Lower Winters DD	shallow marsh ED	19	50	existing	private	mixed residential
3	OP-13A	Middle Winters DD	bioretention	2	100	new	private	Festival at Bel Air shopping center

It is important to emphasize again that the inventory that was conducted as part of this study was not watershed-wide due to available resources. Therefore the recommendations should ultimately be considered in the context of existing retrofit concepts that have been previously developed in the Bynum Run subwatersheds (see KCI, 1999) as well as planned future inventory assessments.

Table 13. Recommended "Tier 1" Retrofit Projects

Recommended Projects for Implementation	Description and Justification
Stormwater retrofit: HH-1 Shallow Marsh Wetland with Forebay	***Description:*** The concept involves converting an existing dry detention pond to a shallow marsh wetland facility. ***Justification:*** This existing site serves a large industrial park and can be easily modified to provide enhanced water quality treatment as well as channel protection storage. The site is located in Haha Branch, where several erosional reaches were identified during the SCAM. Several additional opportunities for source control (volume reduction and groundwater recharge enhancement) also exist within the industrial park. These include exploring porous pavement for a limited number of parking areas, green rooftops (as roofs approach replacement age), rain gardens/bioretention, and shallow onsite infiltration galleries.
Stormwater retrofit: HH-4 Shallow Marsh Wetland with Forebay	***Description:*** The concept involves constructing a new shallow marsh wetland facility at a pipe outfall located in existing open space of a residential area. ***Justification:*** This large residential drainage area currently has no stormwater management and the uncontrolled runoff is causing major channel degradation downstream of the outfall. The retrofit concept provides both water quality and channel protection storage. The concept consumes some existing open space and would likely have some fringe forest impacts associated with it; however, the space is not currently utilized in an active manner and the forest is not mature. In conjunction with HH-1, this site will provide channel protection in Haha Branch to help reduce the sediment load being transported to Bush River.

Table 13. Recommended "Tier 1" Retrofit Projects	
Recommended Projects for Implementation	**Description and Justification**
Stormwater retrofit: OP-4 Shallow Marsh Wetland with Forebay	***Description:*** The concept involves converting an existing dry detention pond to a shallow marsh wetland facility. ***Justification***: This site is at the location of the Food Lion and Post Office off of Hanson Rd in the Otter Point Creek subwatershed. Severe channel erosion is present downstream of the practice that contributes significant sediment loads to the Bush River. The concept is to expand the current facility using the available unused turf area adjacent to the parking lot and convert it to a shallow marsh wetland to provide water quality and channel protection storage. Additional adjacent measures would increase the effectiveness of this retrofit such as incorporating bioretention islands into the Food Lion parking lot, installing porous pavers at the Post Office and providing downspout disconnections using rain barrels or rain gardens at the apartment complexes that parallel the receiving stream.
Stormwater retrofit: OP-6 Wet Extended Detention (ED) Pond	***Description:*** This retrofit consists of converting an existing dry detention pond to a wet extended detention pond along with adding a forebay at each major inflow point. ***Justification:*** This site is located adjacent to BJ's and is presumed to be the facility sized for the ultimate buildout scenario in this retail/commercial complex. The concept is to make modifications to the existing facility as the parcels are built out to provide enhanced water quality treatment and to provide channel protection storage downstream. This latter design modification would bring the facility up to current State of MD criteria for channel protection and would reduce the downstream erosion. In the absence of this modification, it is anticipated that the downstream conditions will significantly degrade in response to the full buildout of the area. Finally, as buildout of this area continues, it should be a priority of the County to encourage the implementation of better site design and low impact development techniques that reduce runoff volumes and promote shallow groundwater recharge such as porous pavement for overflow parking areas, green rooftops, bioretention and stormwater trees for parking lot landscaping, and filter strips and vegetated swales to break up and lengthen flow paths and enhance pollutant removal.

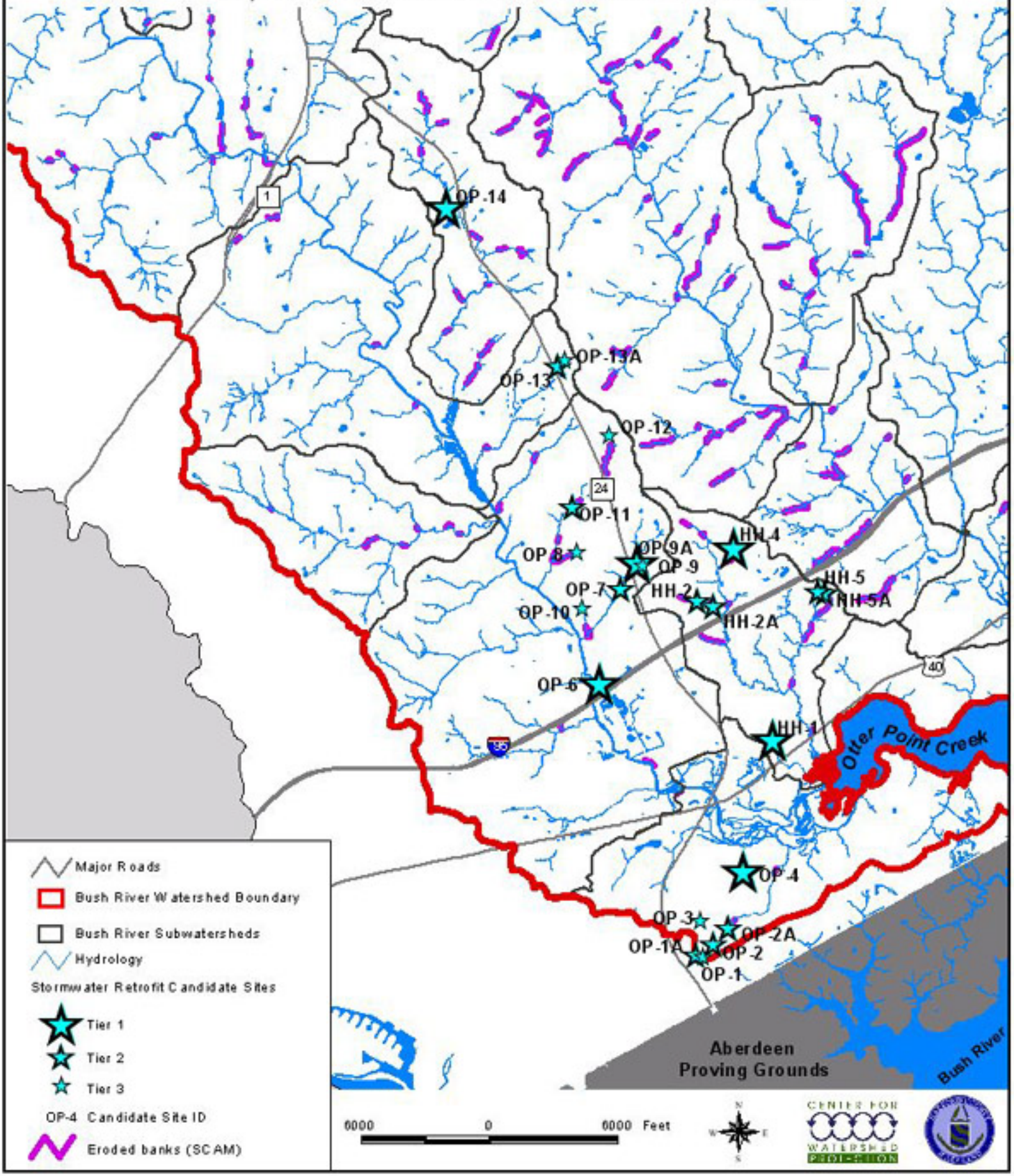
Table 13. Recommended "Tier 1" Retrofit Projects	
Recommended Projects for Implementation	**Description and Justification**
Stormwater retrofit: OP-9 Shallow Marsh Wetland with Forebay and Micropool	***Description:*** The concept involves converting an existing on line control structure to provide more attenuation and convert the expansive upstream area into a shallow marsh wetland facility. ***Justification:*** This site is an online structure that currently provides flood control only. It is likely a SHA facility that was constructed in association with Rte 24 improvements. The site is well below road grades in the area and provides an excellent opportunity to provide water quality and channel protection control on a major tributary to Lower Winters Run. The modification would involve some temporary impacts to existing habitat, but in the long-term would provide more diverse habitat for plant and animal communities. This site is also provides a good opportunity to work cooperatively and potentially cost share with SHA.
Stormwater retrofit: OP-14 Shallow Marsh Wetland with Forebay	***Description:*** The concept involves creating a new shallow marsh wetland facility that receives diverted in-stream water as well as runoff from residential subdivision. ***Justification:*** This Plumtree Run concept is one of the most promising opportunities for retrofitting that was found in the watershed (outside of the City of Bel Air limits). The concept involves creating a shallow marsh wetland behind an existing single family residential subdivision that currently has no controls. The facility would provide water quality and channel protection controls for the subdivision and would likely have additional storage capacity to enable a diversion from the adjacent stream during runoff events that would provide attenuation and limited water quality treatment. The facility would have significant habitat benefits as well. This facility, in conjunction with potential retrofit sites identified but not fully investigated in Bel Air, could provide significant channel protection storage that would help alleviate some of the downstream erosion currently occurring on Plumtree Run.

In addition to the structural retrofits targeted in Table 12, there are a handful of residential areas where nonstructural practices such as downspout disconnection (using filter strips, rain barrels, or rain gardens) could have a meaningful effect on volume reduction and water quality treatment. At least two areas were identified during the retrofit inventory, including:

- Lower Winters Run subdivision in the vicinity of Crissfield Drive and Goodwill Court
- Otter Point apartment facilities along Hanson Road near the Food Lion and Post Office

Potential partnerships with large retailers in the watersheds such as Walmart and BJ's should be explored to initiate and implement a community program where the retailers provide partial or full funding of rain barrels, supplies, etc. to interested residents.

Map 12 - Bush River Stormwater Retrofit Candidate Sites



SECTION 2.7 SUBWATERSHED PRIORITIZATION

This section outlines the methodology for determining the "most vulnerable" or "priority" subwatersheds in Bush River and presents the final prioritization. Prioritization is necessary where more than 15 or more subwatersheds exist in a watershed (Bush River watershed has 19) to group and prioritize subwatersheds so that the County can focus its resources on the subwatersheds that merit prompt restoration and/or preservation actions. Prioritization was determined utilizing all of the previously gathered data: Current IC, Future IC, Other Screening Factors, and field findings. Table 14. summarizes the strategy for subwatershed prioritization.

Table 14. Bush River Subwatershed Prioritization Strategy

Current IC Management Classification	Revised Management Classification	Prioritization Strategy
Sensitive	Sensitive	Those subwatersheds with valuable natural resources, good to excellent stream habitat, development pressures and stand up to field verification.
	Rurally Impacted	All subwatersheds identified as Rurally Impacted
Impacted	Impacted	Those subwatersheds with restoration potential
	Impacted Special Resource	All subwatersheds identified as Impacted Special Resource

Sensitive

There are seven sensitive subwatersheds in the Bush River watershed. To determine which of the Sensitive subwatersheds should be prioritized, CWP devised a point system to act as a first screening for subwatersheds that contain a lot of valuable natural resources, have excellent stream conditions, and may be subject to development pressures in the future.

This analysis, almost identical in nature to the one used for revising management classifications, was based on a quartile approach. More details on this analysis are provided in Section 2.4. Parameters that were assessed to prioritize Sensitive subwatersheds included:

- High percentage of forest suitable for interior dwelling species
- High percentage of wetlands of special concern
- High percentage of forested streamside
- High percentage of habitat of local significance
- Good fish diversity
- Good benthic macroinvertebrate diversity
- Good physical in-stream habitat
- High expected increase in IC (change from Current IC to Future IC)

Details specific to this analysis can be found in Appendix F.

As a result of this analysis, Grays Run (CC-2) (see Figure 11 and Map 14) was identified as priority Sensitive subwatersheds. Because both East Branch (OP-7) and James Run (BC-5) subwatersheds came very close to meeting the scoring requirements, CWP did conduct in-stream habitat assessments and found that both subwatersheds have good in-stream habitat (see Section 2.5). However, field verification also revealed some agriculturally influenced impacts such as cattle access and poor buffer. The field verifications and stream assessments solidify East

Branch and James Run subwatersheds' classification as Sensitive subwatersheds but do not warrant their prioritization.

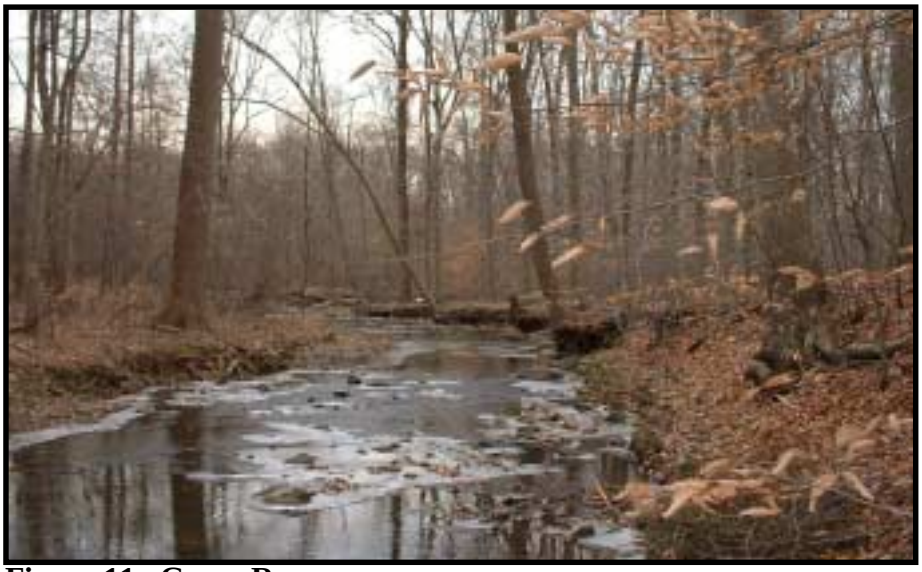


Figure 11. Grays Run

Rurally Impacted

Rurally Impacted subwatersheds were previously identified using a rurally impacted point system in Section 2.4. As a result of this point system, two subwatersheds were identified as Rurally Impacted – Little East Bynum (BC-6) and West Branch (OP-6) (see Maps 15 and 16, respectively). Little East Bynum fell out as Rurally Impacted most notably for its combination of livestock access and large amounts of cropland. West Branch's rurally impacted indicators included high levels of nitrate and large amounts of cropland. As noted in Table 14, all subwatersheds identified as Rural Impacted receive automatic prioritization.

Impacted

Over half of the subwatersheds in Bush River are have an impervious cover over 10%, classifying them as Impacted. A point system was devised to determine which of the Impacted subwatersheds should receive prioritization. Under this point system, Impacted subwatersheds were evaluated on their potential for restoration.

This analysis, is also almost identical in nature to the one used for revising management classifications, was based on a quartile approach. More details on this analysis are provided in Section 2.7. Parameters that were assessed to prioritize Impacted subwatersheds included:

- High number of stormwater facilities (potential for improvement of old facilities)
- High percentage of industrial land (pollution prevention opportunities)
- High percentage of detached residential lots (backyard retrofit opportunities)
- High number of fish blockages (removal for fish passage)
- High number of eroded banks (potential for streambank stabilization)
- High number of trash dumping sites (stream clean-up; community involvement)
- High percentage of public land (no private ownership issues)
- High percentage of parks, forest, and wetlands (pervious area management)
- High percentage of unforested streamside (tree plantings; community involvement)

- High percentage within the development envelope (subject to development pressures)
- One indicator of good stream health (i.e., good fish diversity, bug diversity, or habitat)

Additional details on this analysis can be found in Appendix F.

As a result of this analysis, Middle Bynum (BC-3), Lower Bynum (BC-2) and Plumtree Run (OP-9) subwatersheds (see Maps 22, 23, and 24, respectively) were identified as priority Impacted subwatersheds.

Impacted Special Resource

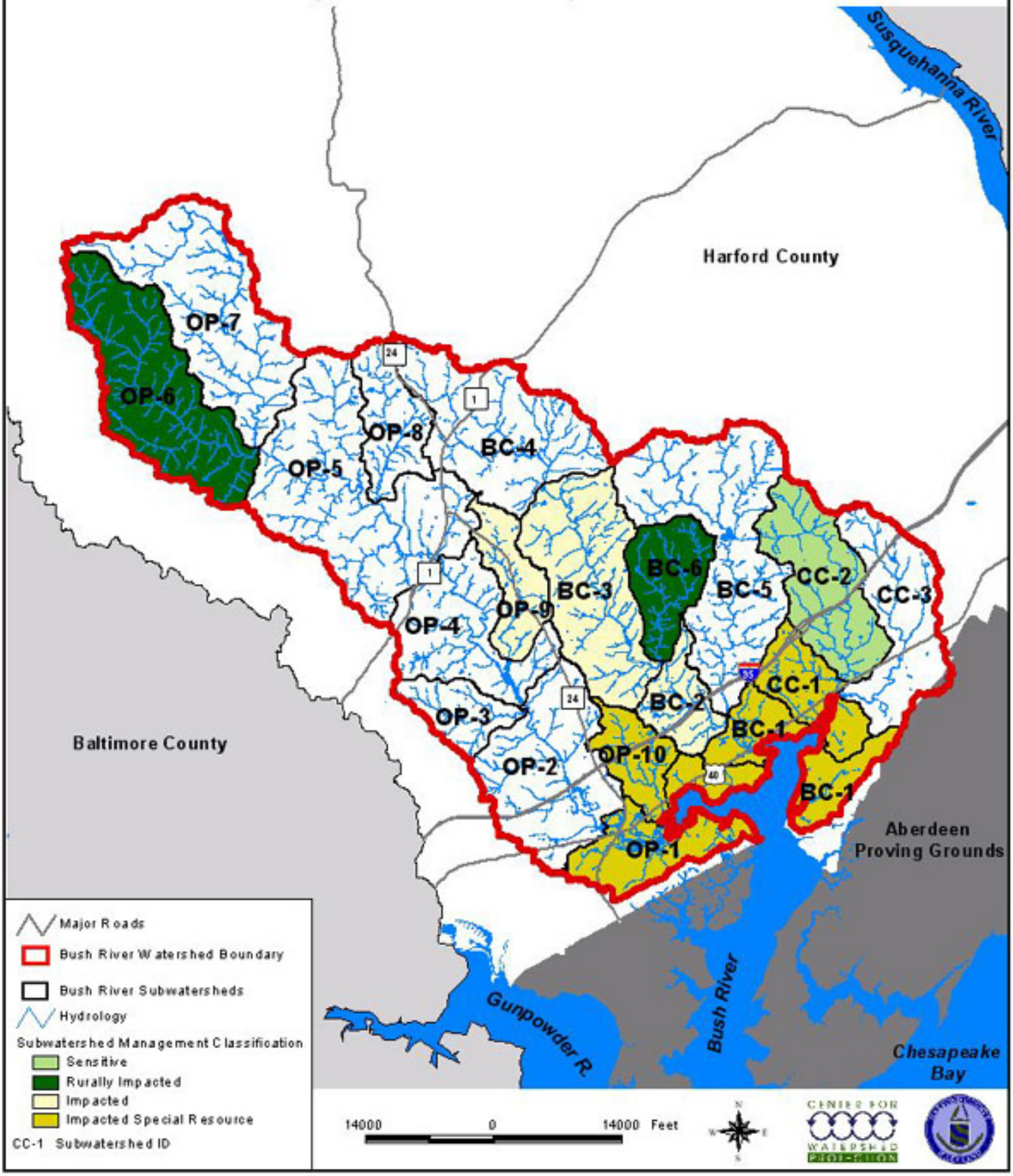
Impacted Special Resource subwatersheds were previously identified using an impacted special resource point system in Section 2.4. As a result of this point system and field verification, Otter Point DD (OP-1), Bush Creek DD (BC-1), Church Creek DD (CC-1), and Haha Branch (OP-10) were identified as Impacted Special Resource (see Maps 17,18, 19, and 20, respectively). All of these subwatersheds exhibit tidal influences and large expanses of wetlands.

A summary of the Bush River priority subwatersheds is provided in Table 13. Map 13 illustrates this prioritization.

Table 15. Bush River Priority Subwatersheds

Category	Subwatershed Name	Subwatershed ID
Sensitive	Grays Run	CC-2
Rurally Impacted	West Branch	OP-6
	Little East Bynum	BC-6
Impacted	Middle Bynum	BC-3
	Lower Bynum	BC-2
	Plumtree	OP-9
Impacted Special Resource	Otter Point DD	OP-1
	Bush Creek DD	BC-1
	Church Creek DD	CC-1
	Haha Branch	OP-10

Map 13 - Bush River Priority Subwatersheds



SECTION 2.8 STAKEHOLDER INVOLVEMENT

Watershed residents and other stakeholders including representatives from local businesses, developers and agencies play a vital role in the creation of a watershed management plan. Stakeholder involvement is a key ingredient in a watershed plan as stakeholders must live with the decisions that are made. They also bring issues to the table that are important to them and participation gives them a stake in the outcome and helps to ensure plan implementation.

The stakeholder involvement process in the Bush River Vulnerability Analysis consists of two public meetings. The first public meeting occurred in February 2003 and covered the eight tools of watershed protection and the initial findings of the vulnerability analysis and was attended by more than 20 stakeholders. Stakeholders were asked a series of questions to identify their concerns and opinions on the issues facing the watershed. Stakeholders also expressed opinions on the tools that are most important to implement and views on public expenditure on restoration and land conservation. The stakeholder views are summarized in Table 16.

The three questions that were asked of the breakout group participants and a summary of subsequent answers are as follows:

What do you value most about the Bush River Watershed and the place that you live?
Stakeholders valued the quality of life they experience in Harford County and the Bush River watershed including the natural beauty from both a rural picturesque sense and the natural surroundings including the forests, wetlands, meadows as well as the scenery and quality of the tidal Bush River. Benefits of clean air and relative proximity to shops, services and natural areas were also significantly valued.

In your opinion, what are the top issues facing the Bush River watershed?
The top issues that stakeholders reported included managing growth and the type of development (making sure impervious cover and impacts to water quality are minimized), streambank erosion (especially from urbanized areas), the need for more rigorous erosion and sediment control applications and enforcement, and runoff from agricultural and urban areas causing sedimentation and eutrophication in the estuary. Two other related issues were the lack of forested buffers on streams and rivers and the loss of forestland which has accompanied growth in Harford County. The other top issue that several of the groups reported was the lack of stewardship of watershed residents and the need for even greater watershed awareness and education for residents and school children.

Which of the eight tools do you feel restoration and protection efforts should be focused on?

Six of the eight tools of watershed protection were discussed specifically by the stakeholders as being important to focus management efforts including Better Site Design (reducing the impact of development when development does occur), Land Conservation (the use of land conservation tools to protect sensitive and resource lands), Buffers (the use of stream buffers to protect streams and rivers), Stormwater Management (the use and retrofit of stormwater practices to improve water quality and channel protection), Stewardship/education (watershed education and stewardship efforts) and Erosion and Sediment Control (reducing sediment loss from new construction). The eight tools of watershed protection are tools discussed in the Center for Watershed Protection's Rapid Watershed Planning Handbook (CWP, 1998).

A summary of the results of the questionnaire on stakeholder interest in citizen participation as well as their views on public expenditure for restoration and land conservation is provided in Table 16. Additional comments we received on the questions are included in Appendix G. Although only a small cross-section of County residents were present, the results reflect a strong interest in citizen participation in watershed protection activities, and strong support for land conservation and restoration activities as well as the expenditure of public resources to accomplish those goals. There is also fairly strong support for denser development in some areas in order to protect others.

Table 16. Summary of Stakeholder Questionnaire Results

***1**. What activities would you as a citizen, be interested in participating?*[1]		
11 Tree planting **11** Stream clean-ups **9** Reducing fertilizer use **7** Reducing pesticide use **6** Picking up after your pet		**6** Being a member of a local watershed group **5** Adopt-a-pond or stream programs **3** Hazardous waste drop offs **3** Putting land in a conservation easement
***2.** Do you support land conservation, transfer of development rights, and open space acquisition initiatives in high quality subwatersheds?*		
Yes	**No**	**No Answer/Other**[2]
7	0	9
a. The use of public funds for these policies?		
Yes	**No**	**No Answer/Other**
10	1	5
b. Denser development in other areas as a result of these programs?		
Yes	**No**	**No Answer/Other**
10	2	4
2. Do you support expenditures of public money on watershed restoration and protection?		
Yes	**No**	**No Answer/Other**
15	**0**	**1**

1: Numbers indicate responses in favor of activity
2: There were a high number of "no answers" for this question because people were not sure if they were supposed to answer this question or just skip to 2a.